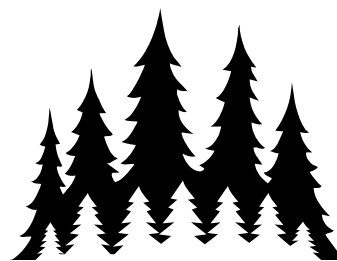


Forest Discovery Trail: Orientation Information



The Forest Discovery Trail is a living classroom in ecological management. The trail leads through 85 acres of young hardwoods and stands of old pines, past rocky streams and forest wetlands. Along the way you will see forest practices that are patterned after natural disturbances. The full tour follows a 1.5 mile loop trail with 10 stops along the way.

Trail Description

The Discovery Trail is a 1.5 mile loop trail with a compacted crushed gravel bed that is 6 feet wide. The trail grade is up to 8% which is easily traveled by a wheelchair. One small section of the trail does have a 14% grade which requires wheelchair assistance. There are benches strategically placed throughout the trail. There are handicapped toilets at the trailhead and a parking lot that will easily accommodate buses.

New Hampshire Weather

New Hampshire's weather is variable and subject to change at any time. The annual mean temperature is 43 F but temperatures range from a record high of 105 F to a record low of -50 F. Precipitation falls evenly year round. Programs are scheduled to happen unless you call and cancel due to weather.

Directions

The Discovery Trail is located on Rte 112, the Kancamagus Highway, 6.2 miles from exit 32 off of Interstate 93. From the exit travel up the Kancamagus Highway through the town of Lincoln, past Lincoln Woods Visitor Center, and the Big Rock Campground. The Discovery Trail trailhead is a ¼ mile up on the left. (The Discovery Trail is 2.2 miles up the Kancamagus Highway from the Lincoln Woods Visitor Center).

Evaluation

Please complete the evaluation form located on page I-8. Your feedback will be used by White Mountain National Forest staff as they continue to revise and enhance the Forest Discovery Trail and Curriculum.

Tips for Taking a Field Trip

As with most aspects of life, the keys to success when taking your classroom on a field trip are organization and communication. The transition from indoors to outdoors is sometimes difficult for both students and teachers. We suggest that you ease into the outdoors. Using pre-visit activities in the outdoors near your school is a good way to get your students and yourself accustomed to learning in the outdoors.

Teaching in the outdoors can be a scary thing. We are placed in a position of authority and knowledge whether or not you feel like an expert in a particular area. We can feel pressure to know “everything” and be able to answer all questions. We want our students to have confidence in our ability to lead them through new experiences. This is all compounded by the fact that.. we teach outside – with all the good and bad that can come with that. Teaching outdoors is definitely a challenge and there is no one way to do it right. But there are a few things that might help you along the way...

Prepare Yourself

Know your stuff! The more comfortable you are with the information you’re presenting, the better you can teach it. Review the material included in the Forest Discovery Trail Curriculum (Section 3.) If possible, visit the trail ahead of time so you have an understanding for how long it will take to walk the trail, specific sites you’d like to focus on, good places to stop, considerations you’ll need to make ahead of time, etc.

Be yourself, know your limits, and be honest with yourself and your students. No one expects you to be a know-it-all. Model the principle of lifelong learning by learning with your students. Questions you can’t answer on-site become a wonderful opportunity for follow-up learning in the classroom. Bring along a notepad to record these questions on, and revisit them when you get back to your classroom.

Safety and health of students should be a primary concern in all outdoor situations. While there can be no guaranteed measures that will protect all of your students all of the time, there are some steps you can take to prevent many mishaps.

- Survey the area before arriving with your group. Look for hazards such as poisonous and stinging plants, loose rocks, etc. Discuss with students in advance how they can avoid these hazards.
- Take a first-aid kit, and know how to use it. Many educators opt to take a cell phone with them for emergencies. Be aware that you may not get cell reception on the Trail. Be sure to locate the nearest place you could get help if a crisis arises.
- Ensuring students understand and follow your guidelines will help prevent many safety and health concerns.

Set Guidelines

Going outdoors should be fun for students. Consequently, student will talk louder, run rather, and pay less attention to directions than they do indoors. But that energetic “outdoor behavior” can be channeled into constructive learning activities. To do this, you will need to establish parameters for student behavior.

Before boarding the bus:

- **Relay all your expectations to students** — What will they learn while they're there, what rules will need to be followed, and what are the consequences for not meeting your expectations? Overview your agenda so there are no surprises.
- **Relay all your expectations to other teachers and chaperones** — Make sure you communicate their role in the outing, give a debriefing if necessary, make sure everyone knows their individual objectives.
- **Have your students broken into groups and wearing name tags.**
- **Agree on helpful hand signals** — If you use the “quiet fox” or “silent rabbit” hand signal to conjure up silence, make sure everyone knows and understands.

Before beginning your exploration of the Trail, please share with your students the following trail rules. Please:

- Stay with your group. Assign one adult to the front of the line and one to the end, ensuring the group stays together.
- Walk only on the trail.
- Respect the plants and animals that call this trail home.
- Respect the needs of other forest visitors.
- Go lightly and leave no trace of your passing.
- Take home only memories—leave plants, rocks, and other natural objects here for others to enjoy.
- Be sure to “Pack it Out!” – there are no trash receptacles along the trail. Please take your trash with you and dispose of it properly.
- Remember that the only bathrooms are at the trailhead, near the parking lot.

After disembarking the bus:

- Relax, enjoy, and learn something new.
- Take advantage of teachable moments as they arise (i.e. a bird flying across the trail, a colorful wildflower, or other feature that you and your students discover as you walk along the trail.)

Keep Students' Attention.. Without a Chalkboard

One major concern teachers have expressed about taking students out of the classroom is not being able to sustain every child's attention. When you get outside, there are so many new things to see and some of them can be distracting. Learn how to use these “distractions” to your advantage:

Consider the timing of your trip — Match your content and your objectives with your timing. Generally, mornings are better for intellectual topics, afternoons are better for hands-on activities. Think AM-Brain, PM-Body.

Consider the duration of your trip — Almost every teacher that ever stood in front of students has made the mistake of trying to do too much. This is especially true in outdoor contexts. Your students will be easily distracted and many factors will influence their attention spans from temperature fluctuations, to bug bits, to hunger pains. Less is more. Break up longer lessons with active movement and reflection. Think of your content as gum and your students processing, practicing, and reflecting as the chewing.

Let the students “discover” the things they are interested in — If you're exploring a neighborhood park and the students shout and gather around a lady bug, let them look close. Pose questions to encourage reflection on what they've found (“what do you think the lady bug eats, where did it come from, how did it grow up?”). If the students find something you are unfamiliar with, create a list! These can be your classroom's future “research” topics.

Give the most easily distracted student a “special task” — Engage the student in the special task of holding or carrying the tools or instruments, inform him or her of a “little known fact” and let them teach the other students what they've learned, set them out to find a green beetle, a smooth rock, a spider's web.....

Bring tools or aids to help students investigate what they find — Put a few tricks up your sleeve by bringing magnifying glasses, color cards from the paint store (“who can match their color card with something in nature?”), field guides to birds, insects and flowers for students to research what they've seen in nature and a few baby food jars for catching and investigating insects. For older students, bring clipboards and worksheets to keep them engaged and searching. Or, just bring a blank sheet of paper and create tasks as you go (“draw something you see at your feet”, “journal the experience you had today”, etc.).

Engage All the Senses with Children

We so often hear the phrase, “stop to smell the roses,” but don't follow through. The classroom is full of interesting things and the outdoors can compliment and enhance your teachings by engaging all of your students' senses.

Look for bright colors in nature — Many of the plants or animals you find are warning others, attracting pollinators or mates, camouflaging, or maybe producing chemical reactions (like the green of chlorophyll).

Feel the differences between textures — Are all rocks rough and hard? Some fur and feathers are soft, others are stiff (for flight) or sleek (for keeping water out). Feel out a special spot in the bark of a tree where you would hide a nut if you were a squirrel.

Smell more than roses — Scents in nature all serve a purpose. Some defend animals from predators (the musk of a skunk), others attract insects (flowers need pollinators). Smells can signal a process is occurring like the fragrance of rich soil –that’s decomposition you smell!

Listen carefully, the animals are telling us something — Sit and listen for two minutes—count silently on your fingers how many different sounds you hear. Many things that sound alike are not created by the same animal (or insect). Are you hearing a cricket’s wings rubbing, a toad’s throat bulging or a bird’s voice signing? Many birds have more than one call. Do you think they are warning others, attracting a mate or are they just happy to be alive?

Reflect

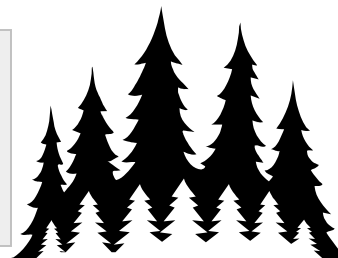
Too many times, this is missed. Give your students multiple opportunities to reflect on what you are teaching them. In general, you should reflect and review material every 10 minutes, every 24 hours, and every 7 days. A few ways to make this happen are:

- Use the “turn to your neighbor” tool. Partway through the trail, have students turn to a neighbor and review what has been discussed. This can be done creatively with good questions, such as “turn to your neighbor and tell them one thing you really understand about this trail, and one thing you have a question about.”
- Use large group debriefs to cement the learning. At the end of your visit, have each student share one thing they will take away from their visit.

For additional information about taking students outdoors, please access the following references:

- Bourne, Barbara. 1999. Taking Inquiry Outdoors: Reading, Writing, and Science Beyond the Classroom Walls. Stenhouse Publishers. ISBN 1571103023
- Corvine, C., W. Welting and E. Arms. 1988. Beyond The Classroom: Exploration of Schoolyard and Backyard. Massachusetts Audubon Society.
- *Teaching in the Outdoors*. Association of Outdoor Recreation and Education.
- “We’re Going Outdoors.” Winter 2001. *Project WEB Newsletter*. New Hampshire Fish & Game Department (publication of NH Project Learning Tree, Project WET and Project WILD). Available online at: www.des.state.nh.us/wet/projweb.htm.

Forest Discovery Trail Curriculum for Grades 5 through 8



Introduction

To many residents of New Hampshire and Maine, working forests are sources of jobs and forest products, and serve as an anchor for the region's culture and heritage. To others, the forest provides cherished opportunities for recreation, including camping, snow sports, fishing, and hiking. To some people, the sights and sounds of logging operations are contrary to their idea of the "northern forest." The Forest Service, working with dedicated partners, created the Forest Discovery Trail to help close this gap of perception and to build understanding for the intricacies of managing a working forest – a forest that provides jobs and forest products as well as recreation opportunities, clean water, air and healthy habitats for fish and wildlife.

Although students depend on forest products in every facet of their lives, few understand the journey from forest community to storefront, and the myriad management decisions required to facilitate that journey. The Forest Discovery Trail—a 1.5 mile trail punctuated with interpretive panels—teaches them about the complexity of managing a forest well and maintaining its health while extracting materials for our own use.

Purpose of the Forest Discovery Trail

- To describe the northern forest ecosystem, including scientific, economic, and social components.
- To develop understanding of the multiple use mission of the White Mountain National Forest in local, regional, and national contexts.
- To display a microcosm of a "working forest" and a sample of the strategies utilized by resource managers to meet a wide array of often-competing objectives.

Purpose of the *Forest Discovery Trail Curriculum*

- To increase students' understanding of forest ecology and management.
- To increase students' understanding of the surrounding National Forests, and of the management objectives and practices affecting them.
- To increase students' understanding of the methods resource managers use to manage a forest.
- To provide pre-visit, on-site, and follow-up activities and resources for exploring the Forest Discovery Trail and the standards and frameworks it addresses within your classroom curriculum.

Forest Discovery Trail Themes for Grades 5-8

1. Plants are physiological systems that are responsible for growth and reproduction.
2. Ecosystems are composed of many interrelationships.
3. Humans are involved in the management and conservation of natural resources.

Introduction to the Curriculum

The *Forest Discovery Trail Curriculum* will help you guide students through these three forest management steps, offering pre-visit, on-site and follow-up activities and related teaching resources. The curriculum also provides supplemental teacher's materials and student worksheets, and offers learning standard correlations for all activities.

The Forest Discovery Trail introduces three key steps in forest management.

1. Researching forest ecology.

Before creating a management plan and carrying out forest management, resource managers must first know what they are managing. Managers study the forest to understand the natural processes at work on the land, in the air and water, assess the area's biodiversity, and map natural communities, cover types, and natural features.

2. Establishing management objectives.

Once resource managers have mapped and inventoried the forest lands they manage, they then begin the task of setting management priorities for those lands. The White Mountain National Forest follows a multiple-use mandate that stipulates that they manage for a wide range of objectives, including conservation of forest health, habitat improvement and protection, timber harvest and productivity, a variety of recreation opportunities, aesthetics, and harvest of non-timber forest products.

3. Determining management strategies.

Once resource managers determine the management objectives for a given forest, they then choose the management strategies that will help them reach those objectives. It is very important for students to realize that forestry is an art as well as a science. Forests are managed for a variety of objectives; sometimes these objectives can be achieved simultaneously and sometimes objectives are mutually exclusive. There are innumerable management options that will achieve a desired objective – the forester will balance all of these to determine the most appropriate course of management.

Learning Standards

The *Forest Discovery Trail Curriculum* is aligned with New Hampshire's state Frameworks for Learning and with the Maine Learning Results. Correlations are noted with each activity.

Evaluation

Please complete the evaluation form located on page I-8. Your feedback will be used by White Mountain National Forest staff as they continue to revise and enhance the Forest Discovery Trail and Curriculum.